

REMARKS

Claims 1-21, 50 and 51 are pending, in which no claims are canceled, withdrawn from consideration, currently amended, or newly presented.

The Office Action mailed November 24, 2009 rejected claims 1, 2, 4, 9, 10, 11-13, 15, 20, 21, 50 and 51 as obvious under 35 U.S.C. § 103 based on *Christodoulides et al.* (US 6,665,361 B1) in view of *Mowbray et al.* (US 6,119,263), further in view of *Miyoshi et al.* (US 7,372,908 B2) and in further view of *Raleigh et al.* (US 6,158,041), claims 3 and 14 based on *Christodoulides et al.* in view of *Mowbray et al.*, *Miyoshi et al.*, *Raleigh et al.*, and *Mogre et al.* (US 20040047433 A1), claims 5, 6, 16, and 17 based on *Christodoulides et al.* in view of *Mowbray et al.*, *Miyoshi et al.*, *Raleigh et al.*, and *Gardner* (US 5,627,499), claims 7 and 18 based on *Christodoulides et al.* in view of *Mowbray et al.*, *Miyoshi et al.*, *Raleigh et al.*, and *Kim et al.* (US 6,851,085 B2), and claims 8 and 19 based on *Christodoulides et al.* in view of *Mowbray et al.*, *Miyoshi et al.*, *Raleigh et al.*, and *Love et al.* (US 7,158,482 B2).

Applicants respectfully traverse the several rejections for the following reasons.

With the reopening of prosecution, the Examiner now introduces the new references of *Mowbray et al.* and *Miyoshi et al.*

Mowbray et al. (see Abstract) discloses a system whereby a data packet is transmitted by dividing it into sub-packets, for example by distributing successive bytes of the data packet to different sub-packets each containing at most $p_n - 1$ symbols, where p is a prime number, and transmitting the sub-packets along two or more respective paths. The Examiner relies on *Mowbray et al.* for a supposed teaching of demultiplexing the data stream into a first data stream and a second data stream.

Miyoshi et al. teaches (see Abstract) a system that provides a duplicating section 11, which duplicates a bit sequence to be input, and a 16QAM section 121 modulates a bit sequence of a duplicating source to form a symbol, a 16QAM section 122 modulates the duplicated bit sequence to form a symbol, an S/P section 13 parallel converts the symbol sequence input in series, an S/P section 14 parallel converts the symbol sequence input in series, and an IFFT section 15 provides IFFT processing to the input symbol sequence. Since each of multiple same bits duplicated by the duplicating section 11 is included in a different symbol, each of the multiple same bits is allocated to each of multiple subcarriers each having a different frequency by IFFT processing. As a result, a multicarrier signal including the multiple same bits each having a different frequency is generated. This reference is relied upon for a supposed disclosure of “demultiplexed packets are duplicating packets.”

First, despite the late stage in prosecution involving an appeal, it is noted the Examiner has not address the fact that the claimed features of **“mapping a codeword specifying framing information of a frame according to a signal constellation to output a data stream; duplicating and demultiplexing the data stream into a first data stream and a second data stream”** and **“a constellation mapper configured to map a codeword specifying framing information of a frame according to a signal constellation to output a data stream, wherein the data stream is demultiplexed into a first data stream and a second data stream”** are not taught by the base reference of *Christodoulides et al.* (see Appeal Brief of Aug. 24, 2009, pages 8-11). Applicants respectfully submit the newly applied references (or the other secondary references of *Raleigh et al.*, *Mogre et al.*, *Gardner*, *Kim et al.*, and *Love et al.*) do not cure these deficiencies, and refer the Examiner to the prior Appeal Brief.

Additionally, the Examiner's rationale for the combination of the several references is misguided. The Examiner (page 4 of the Office Action) contends that the teachings of *Mowbray et al.*, *Miyoshi et al.* and *Raleigh et al.* could be incorporated into the satellite communication system of *Christodoulides et al.* in order to improve the network speed. The Examiner further asserts that by doing so, one would be able to "reconfigure the amount of information which can be transmitted on the channel within the available transmission frames that maximize throughput on the channel, capable of improving reception quality without performing transmission and retransmission, resulting in a decoder that would not be overwhelmed with successive errors, thus optimizing performance and avoiding degrading the system." Applicants respectfully disagree with the Examiner's statements, as they have no technical merit. The modification of *Christodoulides et al.* in the manner that the Examiner has indicated would actually render the operation of the *Christodoulides et al.* inoperable for its intended purpose.

Unlike the claimed invention, *Christodoulides et al.* achieves frame synchronization, channel estimation and data recovery by utilizing a unique word as well as pilot symbols inserted periodically within the frame. Thus, there is already significant overhead in the approach disclosed by *Christodoulides et al.* The motivation for splitting the data stream and modifying one of the data streams and combining them prior to transmission by the Applicants is to eliminate the use of overhead such as that used by *Christodoulides et al.*. There would therefore be no motivation to apply the approach of the Applicants to the system of *Christodoulides et al.*, but instead a teaching away of the claimed invention. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead

away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

Furthermore, Applicants note that the Examiner's assertion of the modification of *Christodoulides et al.* would not work because if the data stream that contains the pilot symbols, data symbols and other entities such as the UW undergoes the operation claimed by the Applicants, namely the splitting, demultiplexing, modification, multiplexing, and scrambling (as in, e.g., clam 9) of the data stream, it would result in the corruption of the precise frame structures. *Christodoulides et al.* describes a frame that conforms to an exact structure with pilot symbols inserted every so often, following a certain sequence, alternating between data symbols and pilot symbols. If this structure is perturbed in any way such as by modifying it, scrambling it, etc., the receiver would not be able to latch on to the frame as it relies on a precise frame structure to achieve frame synchronization and channel estimation. Thus, the modification proposed by the Examiner would not enable frame synchronization, actually resulting in a large number of errors at the receiving end, thereby actually degrading the system, contrary to the Examiner's belief. The requisite motivation to establish a *prima facie* case of obviousness cannot be established by undercutting the expressed objectives of an applied reference. See *In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *In re Schulpen*, 390 F.2d 1009, 157 USPQ 52 (CCPA 1968).

Therefore, the present application, as amended, overcomes the rejections of record and is in condition for allowance. Favorable consideration is respectfully requested. If any unresolved issues remain, it is respectfully requested that the Examiner telephone the undersigned attorney at (310) 964-0560 so that such issues may be resolved as expeditiously as possible.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0383 and please credit any excess fees to such deposit account.

Respectfully Submitted,

Date: February 24, 2010


Todd Snyder, Registration No. 41,320
Attorney for Applicants

The DIRECTV Group, Inc.
CA / LA1 / A109
2230 E. Imperial Highway
El Segundo, CA 90245

Telephone: (310) 964-0560